Section B - Chapter 9

Neuse River Subbasin 03-04-09

Swift Creek, Clayroot Swamp and Creeping Swamp

9.1 Subbasin Overview

Subbasin 03-04-09 at a Glance

Land and Water Area

Total area: 333 mi² Land area: 333 mi² Water area: 0 mi²

Population Statistics

2000 Est. Pop.: 39,456 people Pop. Density: 119 persons/mi²

Land Cover (percent)

Forest/Wetland: 72.9
Surface Water: 0.3
Urban: 3.1
Cultivated Crop: 22.7

Pasture/

Managed Herbaceous: 1.0

Counties

Beaufort, Craven and Pitt

Municipalities

Greenville, Winterville, Vanceboro and Ayden

Population growth in the subbasin is concentrated around Greenville and Ayden in the northern portion of the subbasin and Vanceboro in the southern portion.

Population density is highest (64-160 persons/mi²) around Ayden. Overall development is not as intensive as in the northern subbasins. Land use in the subbasin is mostly agriculture with patchy forested areas. There are 43 acres of managed public lands in this subbasin associated with a small US Fish and Wildlife permanent easement on Creeping Swamp.

There are three NPDES wastewater discharge permits in this subbasin with a total permitted flow of 0.25 MGD (Figure B-9). There is also one individual NPDES stormwater permit in the subbasin. Refer to Appendix I for identification and more information on individual NPDES permit holders. There are also 30 registered animal operations in this subbasin.

There were four benthic macroinvertebrate community samples and one fish community samples (Figure B-9 and Table B-25) collected in 2000 as part of basinwide monitoring. One site decreased in bioclassification, one site maintained the same bioclassification, and three sites were not rated as biocriteria are being developed (page

75) to assess these swampy streams. There were also two special study samples collected in the subbasin during the assessment period. Data were also collected from three ambient stations. Refer to 2001 Neuse River Basinwide Assessment Report at http://www.esb.enr.state.nc.us/bar.html and Section A, Chapter 3 for more information on monitoring.

Use support ratings are summarized in Part 9.2 below. Recommendations, current status and future recommendations for waters that were impaired in 1998 are discussed in Part 9.3 below. Current status and future recommendations for newly impaired waters are discussed in Part 9.4 below. Water quality issues related to the entire subbasin are discussed in Part 9.5. Unless otherwise noted, all discussions are for the aquatic life and secondary recreation use support category. Refer to Appendix III for a complete list of monitored waters by use support category and more information on supporting monitored waters.

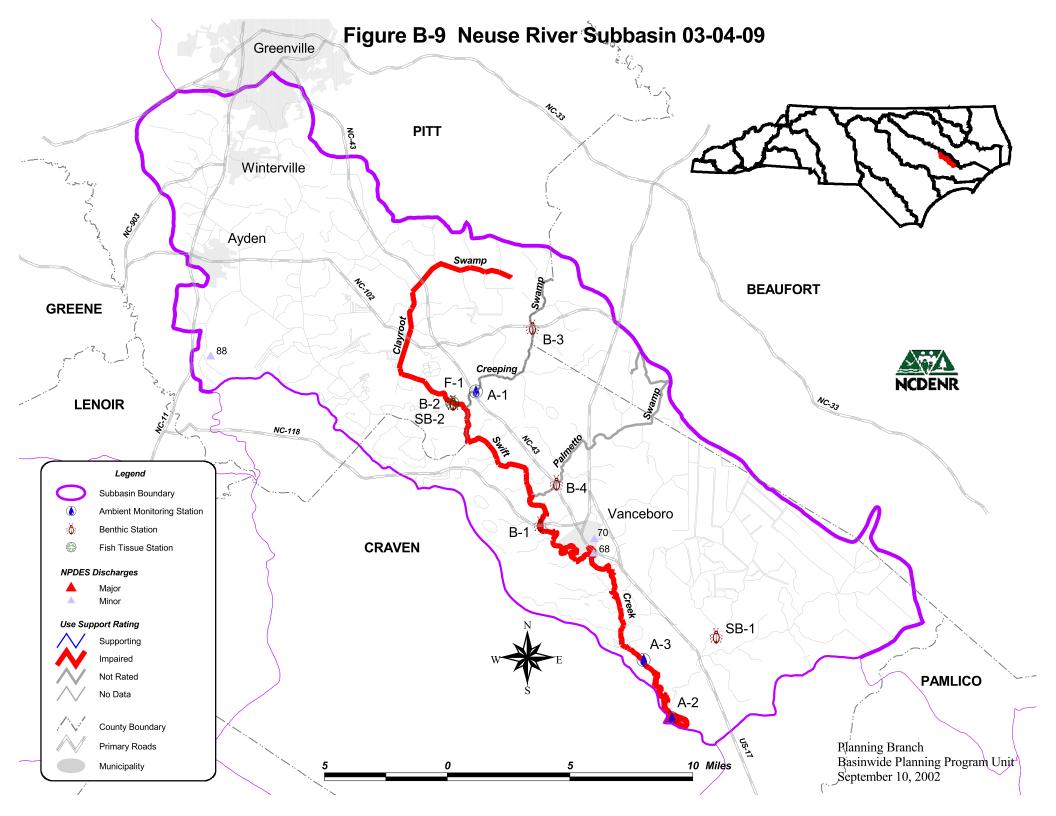


Table B-25 DWQ Monitoring Locations in Subbasin 03-04-09

Benthic Macroinvertebrate Community Monitoring Sites									
Map #1	Waterbody	County	Location	1995	2000				
B-1	Swift Cr ²	Craven	NC 118	Fair	Fair				
B-2	Clayroot Swp ²	Pitt	SR 1941	Fair	Poor				
B-3	Creeping Swp	Pitt	NC 102		Not Rated				
B-4	Palmetto Swp	Craven	NC 43		Not Rated				
SB-1	Fisher Swp	Craven	SR 1621		Not Rated				
SB-2	Clayroot Swp	Craven	SR 1941		Not Rated				
		Fish Community	Monitoring Sites						
Map #1	Waterbody	County	Location	1995	2000				
F-1	Clayroot Swp ²	Craven	SR 1941	Not Rated	Not Rated				
	Ambient Monitoring Sites								
Map #1	Waterbody	County	Location	Station #	Noted				
					Parameters ³				
A-1	Creeping	Craven	NC 43	J8150000	none				
A-2	Swift Cr	Craven	nr Askin	J8210000	none				
A-3	Swift Cr	Craven	NC 43	J8230000	none				

B = benthic macroinvertebrates; F = fish community; A = ambient monitoring station; SB = benthic macroinvertebrates special study site; and SF = fish community special study site.

9.2 Use Support Summary

Use support ratings (page 54) in subbasin 03-04-09 were assigned for aquatic life and secondary recreation and fish consumption. All waters in the subbasin are considered impaired on an evaluated basis because of fish consumption advisories (page 93).

There were 52 stream miles (33 percent) monitored during this assessment period. Approximately 35 (67 percent) of the monitored stream miles are impaired. Refer to Table B-26 for a summary of use support ratings by use support category for waters in the subbasin. Use support ratings for waters that were monitored and impaired in at least one use support category or were impaired in 1998 are presented in Table B-27.

² Historical data available at this site. Refer to Appendix II.

³ Parameters are noted if in excess of state standards in greater than 10 percent of all samples.

Table B-26 Summary of Use Support Ratings by Use Support Category in Subbasin 03-04-09

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption
Supporting	Monitored	0	0
	All Waters	0	0
Impaired	Monitored	35.3 mi	0
	All Waters	35.3 mi	156.8 mi
Not Rated	Monitored	16.7 mi	0
No Data	N/A	104.8 mi	0
Total	Monitored	52 mi	0
	All Waters	156.8 mi	156.8 mi
	Percent Monitored	33% mi	0%

Note: All waters include monitored, evaluated and waters that were not assessed.

Table B-27 Previously or Currently Impaired Waters in Subbasin 03-04-09

Name	1998 Status	2002 Status	Use Support Category	Miles
Clayroot Swamp	Impaired	Impaired	Aquatic Life/Secondary Recreation	12.9
Creeping Swamp	Impaired	Not Rated	Aquatic Life/Secondary Recreation	N/A
Swift Creek	Impaired	Impaired	Aquatic Life/Secondary Recreation	22.4
			Total 2002 Impaired Miles	35.3

9.3 Status and Recommendations of Previously Impaired Waters

9.3.1 Clayroot Swamp

1998 Recommendations

Clayroot Swamp was not supporting from the source to Swift Creek. There were no specific recommendations in the 1998 basin plan, although impairment was attributed to nonpoint source pollution.

Current Status

Clayroot Swamp (12.9 miles) is currently impaired because of Poor and Fair bioclassifications at sites B-2 and F-1. Habitat degradation (page 89) is the most likely cause of impairment. Most of the watershed is in agricultural land use. Very little instream habitat and few pools were noted at the sample sites. Abundant periphyton growth indicates excess nutrient loading especially to the lower watershed. Sediment is also a noted problem in Clayroot Swamp.

2002 Recommendations

DWQ will continue to monitor Clayroot Swamp. As part of the 303(d) list approach, DWQ will begin the process of identifying problem parameters that may be causing biological impairment in Clayroot Swamp. Because of the noted water quality impairment, Clayroot Swamp is a NCWRP targeted local watershed (page 203). Because most of the Clayroot Swamp watershed is in agricultural (page 85) land use, it is recommended that the Division of Soil and Water Conservation (page 202) evaluate the potential for implementation of appropriate BMPs to reduce nutrient and sediment loading.

9.3.2 Creeping Swamp

1998 Recommendations

Creeping Swamp was not supporting from the source to Clayroot Swamp. There were no specific recommendations in the 1998 basin plan, although impairment was attributed to nonpoint source pollution.

Current Status

Clayroot Swamp is currently not rated. Low pH and conductivity indicate that the stream is not as disturbed as nearby channelized streams. The watershed is mostly undisturbed swamp waters. Several benthic macroinvertebrates were collected in Creeping Swamp that were not collected in adjacent Clayroot Swamp.

2002 Recommendations

DWQ will continue monitoring Creeping Swamp. Creeping Swamp is one of the few large non-channelized areas in the eastern part of the state and may serve as a reference reach. Because of the undisturbed nature and potential restoration sites, Creeping Swamp is a NCWRP targeted local watershed (page 203).

9.3.3 Swift Creek

1998 Recommendations

Swift Creek was not supporting from the source to Palmetto Swamp and partially supporting from Palmetto Swamp to the Neuse River. There were no specific recommendations in the 1998 basin plan, although impairment was attributed to nonpoint source pollution.

Current Status

Swift Creek (22.4 miles) is currently impaired from Clayroot Swamp to the Neuse River because of a Fair bioclassification at B-1. Habitat degradation (page 89) is the most likely cause of impairment. There were few pools and a silty substrate was noted at the sample site. There are

large amounts of agricultural land in the upper Swift Creek watershed, and much of the creek has been channelized.

2002 Recommendations

DWQ will resample Swift during a more normal flow year to determine if high flows during the 2000 sampling affected bioclassification. As part of the 303(d) list approach, DWQ will begin the process of identifying problem parameters that may be causing biological impairment in Swift Creek. Because upper Swift Creek watershed is in agricultural (page 85) land use, it is recommended that the Division of Soil and Water Conservation (DSWC) evaluate the potential for implementation of appropriate BMPs to reduce nutrient and sediment loading.

9.4 Status and Recommendations of Waters Newly Impaired Waters

There are no newly impaired waters in subbasin 03-04-09.

9.5 Additional Water Quality Issues Within Subbasin 03-04-09

This section discusses issues that may threaten water quality in the subbasin that are not specific to particular streams, lakes or reservoirs. The issues discussed may be related to waters near certain land use activities or within proximity to different pollution sources.

9.5.1 Impacts of Post-Hurricane De-Snagging on Instream Habitats

Many streams in the subbasin have noted impacts from the recent hurricanes. The biological community in the streams can recover rapidly if instream habitat is maintained. De-snagging operations should carefully remove debris from stream channels to restore natural flow and leave enough instream habitats so the biological community can recover. For more information on this issue, refer to page 86.